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Mild template synthesis of a macrocyclic Cu(II) chelate complex with 1,10-diamino-1,10-dimercapto-5,6-dimethyl-4,7-diazadeca-1,4,6,9-tetraene-3, 8-dithione in Cu2[Fe(CN)6]-gelatin-immobilized matrix implantates

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Abstract

Complexation in Cu2[Fe(CN)6]-gelatin-immobilized matrix implantates in contact with alkaline (pH > 10) aqueous solutions containing propane-1,3-dithioamide and butane-2,3-dione, as well as with an ethanolic solution containing the same organic compounds, was studied. It was found that room-temperature complexation in the gelatin matrix gives a macrocyclic complex CuL1with a tetradentate N,S,S,N-donor ligand via a template synthesis, while complexation in solution at room and higher temperatures yields only a bischelate Cu(II) complex with monodeprotonated propane-1,3-dithioamide. Schemes of the complexation processes were proposed. It was demonstrated that when propane-1,3-dithioamide and butane-2,3-dione are in direct contact in solution, the above N,S,S,N-donor ligand was formed in neither the presence nor the absence of Cu2+. © 2008 MAIK Nauka.

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